

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

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GUY P. JONES
EDITOR

To Swim or Not to Swim

By LOUIS OLSEN, Health Officer, Palo Alto, California

Swimming and bathing have increased tremendously in interest and importance during the past few years and are becoming more and more popular every day. They are not, however, of such comparatively recent origin. Baths have been discovered in early Egyptian palaces and well preserved examples are found in the palaces of the Aegean civilization. These date back as far as 1700-1400 B. C. Bathing also occupied an important place in the life of the Greeks.

The Romans developed bathing to an unusual degree and the technique followed is of interest. The bather undressed and was anointed with oil. Thus anointed he went to a room or court where he could indulge in violent exercise. After this he proceeded to the hot, or steam room. At this point the body was scraped of its accumulation of oil and perspiration. The bather then went to the warm room and then into the cold bath in which there frequently was a swimming pool. Hygienic factors appear to have had much to do with the interest in bathing.

Excesses, common during medieval times under the system of mixed bathing in public baths produced a reaction and the church fathers generally agreed that swimming or bathing should be confined to the purposes of cleanliness and health. This situation may have had something to do with the old nursery rhyme, the authorship of which I have been unable to determine—

Mother may I go out to swim,
Yes, my darling daughter,
Hang your clothes on a hickory limb,
But don't go near the water.

Today, interest in swimming is due to its recreational possibilities. It is recognized as one of the best forms of exercise and recreation. Schools, playgrounds and even private homes are equipped with swimming pools. Children, young people and adults everywhere enjoy them. Swimming has also entered the field of sports, and competition in the water has its place in the Olympic Games.

The above is by way of introduction to the question of the attitude of the health officer to swimming pools and this form of recreation today. I have waded in slowly instead of plunging in as a good swimmer would.

Unfortunately this very popular and enjoyable form of recreation is not without attendant dangers. A wide variety of diseases have, rightly or wrongly, been attributed to swimming pools, including typhoid fever, dysentery, all sorts of skin infections, diseases of the nose and throat, eye infections, ear infections and many of the common communicable diseases. Health authorities recognize that water can act as a medium for transferring infection. This phase of swimming pool sanitation has received intensive attention and effective methods have been perfected

for furnishing a safe water. The slogan "swim in drinking water" is no idle boast. Not only can a clear and practically sterile water be furnished but the water can be made to carry a residual disinfectant to care for reasonable amounts of contamination.

I do not intend to imply that the ultimate has been reached in swimming pool sanitation. Undoubtedly improvements and refinements will be developed in methods of handling the water and caring for the surroundings and appurtenances. I do feel, however, that with the knowledge we have, and with the methods followed in the properly operated pool of today, the possibility of the spread of disease through the pool itself has been reduced to a minimum.

With a safe water, then what factors remain to affect the safety of swimming? Will there still be diseases reported chargeable to the pool, or are some of these charges, or many of them, without foundation? A consideration of the factors involved in the possible causation and spread of disease in connection with swimming pools will be of interest. They may be conveniently considered under the following four headings—1. personal factors, 2. crowding, 3. appurtenances, and 4. the water itself.

Under *personal factors* we have the lack of adaptability of man to life in the water. Man is not an aquatic animal. He does not naturally possess the ability to swim as most animals do. In order to exist at all in the water certain educational processes have to be undertaken. If these are successful he may for a time and with some degree of success overcome some of the dangers or fatal hazards of water.

Man's lack of adaptability is not confined to his inability to swim. Aquatic animals can breathe in and under water. Man cannot. His respiratory apparatus is designed for air only. Water is an irritant to the respiratory passages and does not belong in the nose. The nose is lined with a more delicate and more highly specialized structure than is the mouth. It is covered with a protective coating which is washed away by water. The water need not carry the germs causing colds, sinus infections and similar complaints, but by removing the natural protective forces it makes the individual susceptible to these diseases. This probably is not serious in the normal, healthy individual. However, to the person who already has sinus trouble, or is particularly susceptible to colds, the removal of the protective coating of the nose may be just the factor needed to throw the balance in favor of disease. The result, too often, will be blamed on the lack of sanitation of

the swimming pool, when as a matter of fact careless washing with absolutely sterile water might have produced the same result. The fault in such cases rests with the swimmer and not with the water.

Diseases that may be spread through this personal lack of adaptability include the eye, ear, nose and throat infections. Particularly is this true of the first three, i.e. infections of the eye, ear and nose.

Crowding at swimming pools as a factor in the spread of disease cannot be overlooked. Bathing loads in open air pools vary directly as the weather conditions. On excessively warm days overcrowding is likely to take place and the direct contact spread of the common communicable diseases may result just as readily as at school or in a public gathering. The pool is the magnet that draws the crowds from far and near.

Diseases that may possibly be contracted due to contact infection in crowds at swimming pools include nasal, throat and skin infections.

By *appurtenances* in connection with swimming pools are meant dressing rooms, shower baths, lavatories, toilet rooms and floors. These are susceptible to the spread of disease but no more so because of their connection with swimming pools.

One health hazard that has been greatly stressed in recent years is infection of the feet. Here also the pool has been unjustly blamed. Sanitarians have proved that it is not the water of the pool, but rather the locker room floor, walks or places where people walk barefooted that aid in its spread. It has also been found that the infection is probably just as prevalent among those who do not have access to swimming pools as those who do. While swimmers do not apparently have foot infections more frequently than nonswimmers, some observers believe that they have been more severely. This, in turn, has been attributed to a possible removal of protective substances from the feet through repeated bathing, another personal factor.

The diseases that may be spread by the appurtenances of the pool include therefore skin infections and possibly venereal infections.

The *water* of the pool has received the greatest amount of condemnation as well as attention of all of the factors. From our present day knowledge of the method of spread, there is no reason why a long list of communicable diseases cannot be spread through the medium of the water of the pool. In a public pool the opportunity for the transfer of infectious material from infected individuals to sus-

ceptible persons is always present. The water is constantly receiving the mucous expectoration as well as mouth and body washing of every bather. One would expect that with such possibilities the evidence of infection through pool water would be much greater than it is. As a matter of fact the danger from bathing in polluted water is an unknown quantity. I have never heard of an outbreak of typhoid, dysentery or enteric disease attributed to this source. Only sporadic cases have been charged to such bathing. We know that the drinking of sewage polluted water causes epidemics of typhoid and other enteric infections. Perhaps, in swimming, insufficient quantities of water are swallowed to produce more than an occasional case.

From the evidence it appears possible, however, that eye, ear, nose, throat, skin and gastro-intestinal infections may be transmitted by the pool water.

The communicable diseases and the possibility of spread through each of the above four factors are shown in the accompanying tabulation. Distinction has been made between (1) great possibility, (2) possible, and (3) unlikely.

been controlled by the extermination of insects and vermin. Where the personal element is involved control is much more difficult and less successful.

As mentioned earlier in this paper, measures and methods for insuring the proper sanitation of the appurtenances and the water of swimming pools have been the subject of intensive study and research for several years. As evidence of the attention given this phase of the problem reference is made to the studies of the Joint Committee on Bathing Places of the American Public Health Association and Conference of State Sanitary Engineers. Their published reports, as brought up to date from time to time, furnish a standard and guide for health workers engaged in swimming pool sanitation. It is not the purpose of this paper to go into details of the regulations for the sanitation of swimming pools and other public bathing places but simply to point out that the responsibility for their enforcement has been accepted and that by their application effective results are being obtained. Here, as elsewhere, good success is being had where the personal problem is not involved.

(Continued in next issue)

TABULATION SHOWING FACTORS IN THE SPREAD OF DISEASE IN CONNECTION WITH SWIMMING POOLS

DISEASES	FACTORS			
	PERSONAL Lack of adaptability (1)	CROWDING Direct contact (2)	APPURTENANCES Showers, toilets, floors, etc. (3)	WATER (4)
Eye Infections	++	—	—	+
Ear Infections	++	—	—	+
Nasal Infections	++	+	—	+
Throat Infections	+	+	—	+
Skin Infections	—	+	++	+
Venereal Diseases	—	—	+	—
Gastro-Intestinal	—	—	—	+

++ Indicates great possibility.
+ Indicates possible.
— Indicates unlikely.

From the tabulation I believe it is evident that personal factors and crowding are at least as important and possibly more so than appurtenances and the water itself.

The situation in the control of communicable diseases associated with swimming is not unlike that in the control of diseases in the whole public health field. Health authorities have been eminently successful in the control of those diseases where some factor other than personal contact is involved. Typhoid and enteric diseases have been almost eliminated through the protection of food and water supplies. Malaria, plague and other diseases have

HOW TO READ

Now and then one has to wrest the truth from a book; sometimes one must become a detective to read well. Be not always satisfied with the first gleaning of an author's meaning; great books especially must be read again and again if one is to uncover their deepest veins of thought. Reflect on what you read, recall from time to time the subject-matter of books that seem to you especially significant, discuss their import, be critical and draw conclusions. So will you bring the ideas and emotions of writers to bear upon your problem and your life; so will you develop understanding and creative power.—Leon J. Richardson.

MORBIDITY***Complete Reports for Following Diseases for Week Ending
November 9, 1935****Chickenpox**

228 cases: Alameda County 1, Albany 1, Berkeley 15, Oakland 9, Colusa 3, Contra Costa County 4, Pinole 9, Walnut Creek 1, Fresno 4, Kern County 2, Lake County 2, Los Angeles County 4, Alhambra 1, Glendale 19, Long Beach 2, Los Angeles 33, Montebello 4, Pasadena 1, Pomona 1, Santa Monica 3, South Gate 2, Maywood 1, Marin County 6, San Rafael 1, Orange County 2, Orange 1, Santa Ana 6, Beaumont 4, Sacramento County 1, Sacramento 6, San Bernardino County 1, San Diego County 2, Chula Vista 6, San Diego 6, San Francisco 13, San Joaquin County 9, Stockton 11, San Luis Obispo County 3, San Luis Obispo 3, Daly City 1, Lompoc 3, Santa Maria 1, Santa Clara County 4, San Jose 1, Riverbank 1, Ventura County 3, Santa Paula 1, Yolo County 8, Woodland 1, California 1.*

Diphtheria

60 cases: Alameda County 2, Oakland 8, Imperial County 1, Brawley 1, Kern County 1, Los Angeles County 4, Glendale 2, Los Angeles 11, Anaheim 1, Santa Ana 2, Tustin 1, Riverside County 1, Riverside 5, Sacramento County 2, Sacramento 7, San Bernardino 1, Colton 3, Ontario 2, San Diego 1, San Jose 3, Tulare County 1.

German Measles

51 cases: Alameda County 1, Alameda 2, Oakland 6, Colusa County 1, Contra Costa County 6, Fresno 1, Los Angeles County 5, Burbank 1, Glendale 1, Long Beach 2, Los Angeles 3, Pasadena 1, Santa Monica 1, South Gate 1, Marin County 3, Orange County 2, Sacramento 1, Colton 1, San Francisco 10, Palo Alto 2.

Influenza

32 cases: Lassen County 1, Los Angeles County 1, Los Angeles 16, Santa Monica 2, Anaheim 1, Santa Ana 1, Riverside 1, San Francisco 9.

Malaria

6 cases: San Joaquin County 1, Sutter County 3, California 2.*

Measles

168 cases: Alameda County 1, Albany 8, Berkeley 2, Oakland 4, Fresno County 1, Fresno 11, Kern County 1, Los Angeles County 5, Compton 2, Los Angeles 12, Monrovia 1, Pasadena 1, Redondo 1, Whittier 1, Marin County 7, Alturas 1, Monterey County 3, Monterey 4, Pacific Grove 3, Salinas 9, Fullerton 1, Santa Ana 1, Riverside County 1, Riverside 3, Colton 1, Ontario 1, San Diego County 1, San Diego 2, San Francisco 16, Santa Barbara County 9, Lompoc 2, Mountain View 3, Palo Alto 1, Santa Clara 1, Ventura County 3, Yolo County 11, Woodland 33.

Mumps

186 cases: Alameda 1, Berkeley 10, Oakland 45, Amador County 1, Gridley 1, Colusa 2, Pinole 1, Richmond 1, Fresno County 5, Kern County 2, Lassen County 8, Los Angeles County 2, Long Beach 7, Los Angeles 16, Pasadena 1, Pomona 2, Torrance 1, Maywood 1, Madera County 1, Marin County 1, Salinas 8, Grass Valley 1, Nevada City 1, Orange County 2, Santa Ana 3, Placentia 1, Beaumont 2, Riverside 2, Sacramento 25, San Bernardino County 3, San Bernardino 1, San Diego County 2, San Diego 1, San Francisco 4, San Joaquin County 3, Stockton 12, San Luis Obispo 3, Santa Barbara County 1, Santa Barbara 1, Yolo County 1.

Pneumonia (Lobar)

50 cases: Oakland 1, Fresno County 1, Fresno 1, Kern County 1, Lake County 2, Los Angeles County 4, Beverly Hills 1, Los Angeles 15, Monterey Park 1, Madera County 2, Santa Ana 2, Seal Beach 1, Riverside County 1, Riverside 2, Sacramento County 1, National City 1, San Diego 2, San Francisco 8, San Mateo 3.

Scarlet Fever

274 cases: Berkeley 2, Oakland 11, Gridley 1, Calaveras County 3, Contra Costa County 4, Martinez 4, Richmond 3, Fresno County 10, Fresno 2, Glenn County 2, Humboldt County 1, Imperial County 1, El Centro 1, Kern County 9, Los Angeles County 22, Alhambra 9, Avalon 1, Compton 2, Glendale 1, Huntington Park 1, Long Beach 6, Los Angeles 45, Monrovia 1, Montebello 1, Pasadena 1, Whittier 1, Torrance 4, West Covina 1, South Gate 3, Maywood 1, Bell 2, Madera 1, Marin County 1, San Rafael 1, Grass Valley 5, Nevada City 2, Orange County 5, Fullerton 1, Huntington Beach 1, Orange 2, Santa Ana 2, Placentia 1, Roseville 1, Plumas County 1, Riverside County 3, Riverside 1, Sacramento County 9, Sacramento 16, Colton 2,

* Cases charged to "California" represent patients ill before entering the state or those who contracted their illness traveling about the state throughout the incubation period of the disease. These cases are not chargeable to any one locality.

Redlands 1, San Diego County 3, Chula Vista 2, San Diego 11, San Francisco 14, San Joaquin County 2, Stockton 2, Tracy 1, San Luis Obispo County 2, Paso Robles 1, San Mateo County 1, Daly City 1, Redwood City 1, Menlo Park 1, Santa Barbara County 1, Santa Barbara 3, Santa Cruz County 2, Vacaville 1, Vallejo 1, Stanislaus County 1, Tulare County 1, Ventura County 4, Davis 4, Woodland 2.

Smallpox

No cases reported.

Typhoid Fever

11 cases: Glenn County 1, Los Angeles County 1, Los Angeles 2, San Joaquin County 3, Tracy 2, Santa Barbara 1, Tulare County 1.

Whooping Cough

145 cases: Alameda County 1, Alameda 4, Albany 1, Berkeley 5, Oakland 9, Calaveras County 1, Los Angeles County 7, Huntington Park 1, Los Angeles 9, Maywood 5, Bell 2, Soledad 2, Grass Valley 2, Orange County 1, Orange 1, Sacramento 1, Colton 1, San Diego County 9, Chula Vista 10, San Diego 21, San Francisco 19, Manteca 1, Stockton 14, San Luis Obispo County 2, Burlingame 1, Daly City 1, San Jose 4, Watsonville 6, Benicia 3, Ventura County 1.

Meningitis (Epidemic)

5 cases: Butte County 1, Los Angeles 1, San Anselmo 1, San Joaquin County 1, Tulare County 1.

Dysentery (Amoebic)

6 cases: Berkeley 1, Kern County 1, Los Angeles 1, Santa Ana 1, San Francisco 2.

Dysentery (Bacillary)

4 cases: Los Angeles 2, San Diego 1, California 1.*

Ophthalmia Neonatorum

One case: Orange County.

Pellagra

One case: San Francisco.

Poliomyelitis

8 cases: Lake County 1, Los Angeles 1, Mill Valley 1, Monterey County 1, San Francisco 3, San Luis Obispo County 1.

Tetanus

One case: Los Angeles.

Trachoma

9 cases: Los Angeles 1, National City 1, San Francisco 1, Santa Maria 1, California 5.*

Hookworm

One case: Berkeley.

Trichinosis

5 cases: Los Angeles.

Botulism

2 cases: Los Angeles.

Tularemia

One case: San Francisco.

Septic Sore Throat (Epidemic)

3 cases: Los Angeles County 2, San Francisco 1.

Rabies (Animal)

11 cases: Contra Costa County 1, Los Angeles County 2, Inglewood 1, Los Angeles 1, San Diego County 4, San Diego 2.

Paratyphoid Fever

2 cases: Los Angeles 1, San Diego 1.

A planned life is better than a helter-skelter one, just as planned society is better than chaos. A rivulet following the line of least resistance runs crookedly.—Leon J. Richardson.

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